

FILE ID**LIBFAOL

N 9

LL IIIIIII BBBBBBBBBB FFFFFFFFFF AAAAAAA 000000 LL
LL IIIIIII BBBBBBBBBB FFFFFFFFFF AAAAAAA 000000 LL
LL II BB FF AA AA 00 00 LL
LL II BB FF AA AA 00 00 LL
LL II BB FF AA AA 00 00 LL
LL II BB FF AA AA 00 00 LL
LL II BB FF AA AA 00 00 LL
LL BBBBBBBBBB FFFFFFFF AA AA 00 00 LL
LL BBBBBBBBBB FFFFFFFF AA AA 00 00 LL
LL II BB FF AAAAAAAA 00 00 LL
LL II BB FF AAAAAAAA 00 00 LL
LL II BB FF AA AA 00 00 LL
LL II BB FF AA AA 00 00 LL
LLLLLLLLLL IIIIIII BBBBBBBBBB FF AA AA 000000 LLLLLLLLLL
LLLLLLLLLL IIIIIII BBBBBBBBBB FF AA AA 000000 LLLLLLLLLL

```
1 0001 0 MODULE LIB$SYS_FAOL (
2 0002 0
3 0003 0 IDENT = '1-009' ! File: LIBFAOL.B32 EDIT RKR1009
4 0004 0
5 0005 0 ) =
6 0006 1 BEGIN
7 0007 1 ****
8 0008 1 ****
9 0009 1 *
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28 0028 1 *
29 0029 1 ****
30 0030 1 ****
31 0031 1 ****
32 0032 1 ++
33 0033 1 FACILITY: General Library Support
34 0034 1
35 0035 1 ABSTRACT:
36 0036 1
37 0037 1 This routine calls $FAOL for the caller, returning the
38 0038 1 resulting string using the semantics of the caller's string.
39 0039 1 The length of the resultant string is limited to 256 bytes max and
40 0040 1 truncation may occur.
41 0041 1
42 0042 1
43 0043 1 ENVIRONMENT: VAX-11 User Mode
44 0044 1
45 0045 1 AUTHOR: R. Reichert, CREATION DATE: 20-SEPT-1979
46 0046 1
47 0047 1 MODIFIED BY:
48 0048 1
49 0049 1 1-001 - Original. RKR 20-SEPT-1979
50 0050 1 1-002 - Change name to LIB$SYS_FAOL. RKR 15-OCT-1979
51 0051 1 1-003 - Change logic for status returned. Improve comments.
52 0052 1 RKR 20-OCT-79
53 0053 1 1-004 - Correct case where P1 is an actual parameter of value 0.
54 0054 1 RKR 29-OCT-79
55 0055 1 1-005 - Improve description of routine. RKR 1-NOV-79
56 0056 1 1-006 - Change STR$ codes to LIB$ codes. RKR 22-JAN-80
57 0057 1 1-007 - Enhance to recognize additional classes of string descriptors
```

58 0058 1 | on output by always getting data into internal buffer and
59 0059 1 | using LIB\$COPY_DXD6 to deliver to caller's buffer.
60 0060 1 | LIB\$ANALYZE_SDESC_R3 is used to compute the number of bytes
61 0061 1 | actually copied after the copy operation completes.
62 0062 1 | Change to use LIB\$SCOPY_DXD6 instead of STR\$COPY_DX. This
63 0063 1 | avoids having to change STR\$ statuses to LIB\$ statuses and
64 0064 1 | eliminates need for a handler.
65 0065 1 | RKR 29-MAY-1981.
66 0066 1 | 1-008 - Add special-case code to process string descriptors that
67 0067 1 | "read" like fixed string descriptors. RKR 7-OCT-1981
68 0068 1 | 1-009 - Redirect jsb's from LIB\$ANALYZE_SDESC_R3 to
69 0069 1 | LIB\$ANALYZE_SDESC_R2. Do copying using LIB\$SCOPY_R_DX6.
70 0070 1 | RKR 18-NOV-1981
71 0071 1 | --
72 0072 1 |
73 0073 1 !<BLF/PAGE>

```
75      0074 1 | SWITCHES:  
76      0075 1 |  
77      0076 1 |  
78      0077 1 |  
79      0078 1 | SWITCHES ADDRESSING MODE  
80      0079 1 | (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);  
81      0080 1 |  
82      0081 1 |  
83      0082 1 | LINKAGES:  
84      0083 1 |  
85      0084 1 | REQUIRE 'RTLIN:STRLNK';  
86      0269 1 |  
87      0270 1 | TABLE OF CONTENTS:  
88      0271 1 |  
89      0272 1 |  
90      0273 1 | FORWARD ROUTINE  
91      0274 1 | LIB$SYS_FAOL;           ! Formated ASCII output  
92      0275 1 |  
93      0276 1 |  
94      0277 1 | INCLUDE FILES:  
95      0278 1 |  
96      0279 1 |  
97      0280 1 | REQUIRE 'RTLIN:RTLPSECT';   ! Macros for defining psects  
98      0375 1 |  
99      0376 1 | LIBRARY 'RTLSTARLE';     ! System symbols and macros  
100     0377 1 |  
101     0378 1 |  
102     0379 1 | MACROS:  
103     0380 1 |  
104     0381 1 |     NONE  
105     0382 1 |  
106     0383 1 | EQUATED SYMBOLS:  
107     0384 1 |  
108     0385 1 | LITERAL  
109     0386 1 |     LOCAL_BUF_SIZE = 256 ;  
110     0387 1 |  
111     0388 1 | PSECTS:  
112     0389 1 |  
113     0390 1 | DECLARE_PSECTS (LIB);       ! Declare psects for LIB$ facility  
114     0391 1 |  
115     0392 1 | OWN STORAGE:  
116     0393 1 |  
117     0394 1 |     NONE  
118     0395 1 |  
119     0396 1 | EXTERNAL REFERENCES:  
120     0397 1 |  
121     0398 1 |  
122     0399 1 | EXTERNAL ROUTINE  
123     0400 1 |     LIB$ANALYZE_SDESC_R2 : LIB$ANALYZE_SDESC_JSB_LINK, ! Extract length  
124     0401 1 |                         and address of  
125     0402 1 |                         1st data byte  
126     0403 1 |                         from descriptor  
127     0404 1 |     LIB$SCOPY_R_DX6 : STRING_JSB;! Copy string
```

```
: 129      0405 1 GLOBAL ROUTINE LIB$SYS_FAOL (           ! Formated ASCII output
: 130      0406 1
: 131      0407 1
: 132      0408 1     CTRSTR,          ! addr of string desc. for ASCII control string
: 133      0409 1
: 134      0410 1     OUTLEN,          ! addr of word in which to store output string
: 135      0411 1           length (Optional)
: 136      0412 1
: 137      0413 1     OUTBUF,          ! addr of output buffer string descriptor
: 138      0414 1
: 139      0415 1     PRMLST           ! addr of list of longword parameters
: 140      0416 1
: 141      0417 1           For additional description of parameters,
: 142      0418 1           see $FAOL documentation.
: 143      0419 1
: 144      0420 1           ) : =
: 145      0421 1
: 146      0422 1
: 147      0423 1     ++ FUNCTIONAL DESCRIPTION:
: 148      0424 1
: 149      0425 1           This routine calls $FAOL for the caller, returning the
: 150      0426 1           resulting string using the semantics of the caller's string.
: 151      0427 1           The length of the resultant string is limited to 256 bytes max and
: 152      0428 1           truncation may occur.
: 153      0429 1
: 154      0430 1           See $FAOL description
: 155      0431 1
: 156      0432 1     FORMAL PARAMETERS:
: 157      0433 1
: 158      0434 1     CTRSTR.rt.dx    addr of string desc. for ASCII control string
: 159      0435 1
: 160      0436 1     OUTLEN.ww.r    addr of word in which to store output string
: 161      0437 1           length
: 162      0438 1           (Optional parameter)
: 163      0439 1
: 164      0440 1     OUTBUF.wt.dx    addr of output buffer string descriptor
: 165      0441 1
: 166      0442 1     PRMLST.ra.??    addr of a list of longword parameters
: 167      0443 1
: 168      0444 1           For additional description of parameters,
: 169      0445 1           see $FAOL documentation.
: 170      0446 1
: 171      0447 1
: 172      0448 1
: 173      0449 1     IMPLICIT INPUTS:
: 174      0450 1           NONE
: 175      0451 1
: 176      0452 1
: 177      0453 1     IMPLICIT OUTPUTS:
: 178      0454 1           NONE
: 179      0455 1
: 180      0456 1
: 181      0457 1
: 182      0458 1
: 183      0459 1           SSS_NORMAL      Procedure successfully completed
: 184      0460 1           From LIB$COPY_R_DX6
: 185      0461 1           LIB$_STRTRU     Success, but source string truncated
```

186 0462 1 | LIB\$_INSVIRMEM Insufficient virtual memory
187 0463 1 | LIB\$_INVSTRDES Invalid string descriptor
188 0464 1 | LIB\$_INVARG Invalid argument (usually unsupported class
189 0465 1 | of descriptor)
190 0466 1 | From \$FAOL
191 0467 1 | SSS_BUFFEROVF Successfully completed, but formatted output
192 0468 1 | string overflowed the output buffer and has
193 0469 1 | been truncated.
194 0470 1 | SSS_BADPARAM An invalid directive was specified in the FAO
195 0471 1 | control string.
196 0472 1 |
197 0473 1 | SIDE EFFECTS:
198 0474 1 |--
199 0475 1 |
200 0476 1 |
201 0477 1 |
202 0478 2 | BEGIN
203 0479 2 | BUILTIN
204 0480 2 | ACTUALCOUNT,
205 0481 2 | NULLPARAMETER,
206 0482 2 | ACTUALPARAMETER ;
207 0483 2 |
208 0484 2 | LOCAL
209 0485 2 | COPY STATUS, ! status from copy operation
210 0486 2 | STR STATUS, ! status from \$FAOL call
211 0487 2 | LOCAL_BUFF: VECTOR [LOCAL_BUF_SIZE,BYTE] , ! local buffer
212 0488 2 | BUFFER_DESC : BLOCK [8, BYTE]; ! descr for local buffer
213 0489 2 |
214 0490 2 | MAP
215 0491 2 | OUTBUF : REF BLOCK [BYTE]
216 0492 2 | OUTLEN : REF VECTOR [,WORD];
217 0493 2 |
218 0494 2 |+ Construct a static descriptor to receive the data from the system
219 0495 2 | service call
220 0496 2 |
221 0497 2 |
222 0498 2 | BUFFER_DESC [DSC\$W_LENGTH] = LOCAL_BUF_SIZE;
223 0499 2 | BUFFER_DESC [DSC\$B_DTYPE] = DSC\$K_DTYPE_T;
224 0500 2 | BUFFER_DESC [DSC\$B_CLASS] = DSC\$K_CLASS_S;
225 0501 2 | BUFFER_DESC [DSC\$A_POINTER] = LOCAL_BUFF;
226 0502 2 |
227 0503 2 |+ Call \$FAOL using the appropriate combination of caller's
228 0504 2 | parameters, default parameters and local variables
229 0505 2 |
230 0506 2 |
231 0507 2 |
232 P 0508 2 | STR_STATUS = \$FAOL (
233 P 0509 2 | CTRSTR = ACTUALPARAMETER(1),
234 P 0510 2 | OUTLEN = BUFFER_DESC,
235 P 0511 2 | OUTBUF = BUFFER_DESC,
236 P 0512 2 | PRMLST = (IF (ACTUALCOUNT() LSSU 4)
237 P 0513 2 | THEN 0
238 P 0514 2 | ELSE ACTUALPARAMETER(4))
239 P 0515 2 |) ;
240 P 0516 2 |
241 P 0517 2 |+
242 P 0518 2 | Copy internal buffer to caller's buffer, letting LIB\$COPY_R_DX6

```

243      0519 2 ! worry about its semantics.
244      0520 2
245      0521 2 COPY_STATUS = LIB$COPY_R_DX6 (.BUFFER_DESC [DSC$W_LENGTH],
246          .BUFFER_DESC [DSC$A_POINTER],
247          .OUTBUF) ;
248
249      0525 2
250      0526 2 + If caller supplied optional length parameter, update it.
251      0527 2 To do this accurately, we need to inspect the resulting descriptor
252          as it appears after the copy. Get LIB$ANALYZE_SDESC R2 to do it.
253      0528 2 No need to check LIB$ANALYZE_SDESC_R2 status. If OUTBUF descr
254          was bad, LIB$COPY_R_DX6 would have told us about it.
255      0531 2
256      0532 3 IF (NOT NULLPARAMETER(2))
257      0533 2 THEN
258          BEGIN
259              LOCAL
260                  OUTBUF_LEN,           ! No. of bytes delivered to caller
261                  OUTBUF_ADDR;       ! Address of 1st data byte of callers
262                      buffer
263                  IF .OUTBUF [DSC$B_CLASS] GTRU DSC$K_CLASS_D
264                      THEN ! Used generalized length extraction
265                          BEGIN
266                              LIB$ANALYZE_SDESC_R2 ( .OUTBUF ; OUTBUF_LEN, OUTBUF_ADDR );
267                          END
268
269                  ELSE ! Fetch length directly
270
271                  OUTBUF_LEN = .OUTBUF [DSC$W_LENGTH] ;
272
273                  OUTLEN [0] = MIN (.BUFFER_DESC [DSC$W_LENGTH], .OUTBUF_LEN) ;
274
275                  END;
276
277      0552 2 + At this point we have 2 statuses that we could return to caller.
278      0553 2 Determine which one is the 'most meaningful'.
279
280      0555 2
281      0556 2 + If original $FAOL call failed, tell him about that
282          else give him the copy status.
283
284      0559 3 IF NOT .STR_STATUS THEN RETURN (.STR_STATUS)
285          ELSE RETURN (.COPY_STATUS) ;
286      0561 2
287      0562 1 END; ! end of LIB$SYS_FAOL

```

```

.TITLE LIB$SYS_FAOL
.IDENT \1-009\

.EXTRN LIB$ANALYZE_SDESC_R2
.EXTRN LIB$COPY_R_DX6
.EXTRN SYSSFAOL

.PSECT _LIB$CODE,NOWRT, SHR, PIC,2
.ENTRY LIB$SYS_FAOL, Save R2,R3,R4,R5,R6,R7,R8 : 0405
    MOVAB -260(SPT, SP)

```

5E FEFC CE 01FC 00000
 9E 00002

; Routine Size: 128 bytes, Routine Base: LIB\$CODE + 0000

287 0563 1
288 0564 1 END
289 0565 1
290 0566 0 ELUDOM

! end of module LIBSSYS_FAOL

PSECT SUMMARY

Name	Bytes	Attributes
_LIB\$CODE	128	NOVEC,NOWRT, RD , EXE, SHR, LCL, REL, CON, PIC,ALIGN(2)

Library Statistics

File	----- Symbols -----	Pages	Processing
	Total Loaded Percent	Mapped	Time
\$_\$255\$DUA28:[SYSLIB]STARLET.L32;1	9776 10 0	581	00:00.7

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LISS:LIBFAOL/OBJ=OBJ\$:LIBFAOL MSRC\$:LIBFAOL/UPDATE=(ENH\$:LIBFAOL)

: Size: 128 code + 0 data bytes
: Run Time: 00:04.3
: Elapsed Time: 00:18.0
: Lines/CPU Min: 7842
: Lexemes/CPU-Min: 33090
: Memory Used: 72 pages
: Compilation Complete

**0206 AH-BT13A-SE
VAX/VMS V4.0**

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